NOVEMBER/DECEMBER 2024

23PEPH15A — BIO PHYSICS

Time : Three hours Maximum : 75 marks

T.V.Malai Arts & Science College

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the function of the cell cycle?
2. Define Vesicular Transport.
3. Write the general formula of ammo acids.
4. What is nucleoproteins?
5. How is cell membrane act like a capacitor?
6. Give the application of Nernst equation.
7. What are x-rays?
8. What are the effects of gamma radiation on cells?
9. What is absorption spectrophotometry?
10. Write a note on X-ray crystallography.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the structural peculiarities of Eukaryotic cell organization.

Or

(b) What is the main function for the extra cellular matrix?

12. (a) Enumerate the difference between RNA and DNA.

Or

(b) What are the three components of a nucleotide and also explain in detail.

13. (a) What are the three types of transport across a cell membrane and explain?

Or

(b) Briefly explain an electrochemical potential.

14. (a) Explain in detail about gamma radiation effects on nucleic acid and membranes.

Or

(b) What is the purpose of UV radiation in cancer treatment?

Shanmuga Industries Arts & Science College T.V.Malai

15. (a) Differentiate thin layer chromatography and gas liquid chromatography.

Or

(b) Write the working principle of ESR and also explain its biological applications.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Draw the life cycle of cells and explain its architecture.

17. Discuss primary, secondary, tertiary and quaternary structure of proteins.

18. Explain the difference between the Goldman equation and the Nernst equation.

19. List out the effects of X-rays on biological macromolecules.

20. Give basic principle of centrifugation and explain its types.

———————